1882–83) was recently issued at Christiania; and we have already said something as to the contents (NATURE, December 13, 1888, p. 155). The following is a translation of a statement, by Herr Cand. C. Krafft, in this Report:—

"For spectroscopic researches the Expedition took with them a Wrede spectroscope. Unfortunately the obligatory observations did not render it possible to devote adequate attention to spectroscopic researches. The writer may also specially note that the use of powerful magnifiers made measurements with the above-mentioned apparatus extremely fatiguing, and often quite impossible. It seemed to me all the more permissible to omit these measurements because the situation of the usual aurora-line is often very distinctly defined. Other lines besides these were only sometimes observed. Weak, indeterminable bands I observed on November 12, 4h. 18m. If I remember rightly, I saw similar indeterminable bands on another occasion, but I cannot find any notice of it in the observations. The red line was sometimes remarked, but it showed itself very conspicously, and flashed up only some moments (November 2, 9h. 15m.; November 17, 4h.). The general rule is that only the aurora-line was to be seen even in strong auroræ; as, for example, on November 2, 8h. 55m., during a crown-formation, and on November 5, 8h.–9h. on a bow with the intensity 2–3.

"In order to find the value of the scale-division of the spectroscope expressed in wave-lengths, I made, on October 30, 1882, the following determination of the most important Fraunhofer lines:—

B ... 25·04 ($\lambda = 6867$) *a* ... 23·27 ($\lambda = 6276$)
C ... 24·16 ($\lambda = 6562$) D (Mean) 21·78 ($\lambda = 5892$)
E ... 18·51 ($\lambda = 5269$)
b (Mean) 17·84 ($\lambda = 5174$)

"With the help of these determinations I constructed a curve, and obtained from it the following wave-lengths of the auroral lines:—

November 2, 8h. 55m. aurora-line (mean) 20·37 ... $\lambda = 5595$
November 11, 10h. 15m. aurora-line 20·26 ... ... $\lambda = 5586$
[D (NaCl flame) 21·71.]

"November 17, 4h. 20m.; Herr Schroeter found the following values:—

$$\text{Aurora-line} \left.\begin{matrix} 20{\cdot}37 \\ 31 \\ 34 \\ 34 \end{matrix}\right\} \text{Mean } 20{\cdot}34 \;\ldots\; \lambda = 5587$$

Red line 23·00 ... $\lambda = 6205$.

"On account of the rapid flashing-up and disappearance of the red line only this one measurement could be obtained.

"The spectroscope was used chiefly to decide occasionally, in doubtful cases, whether and how far the aurora was present—a matter which, as is well known, it is very often impossible to decide in any other way. Fine cirrostratus clouds may so closely resemble the aurora as to be taken for it, especially if they are lighted by the moon or by twilight. In the latter case one may recognize the aurora-line apart from the continuous spectrum (January 15, 12h.; March 29, 14h.). Meanwhile I do not think I can decide whether the aurora line is to be regarded as absolute criterion for the aurora; I have had an opportunity of observing pulsating masses of light (December 18, 9h.), and also otherwise inexplicable phenomena of light, as well with the usual aurora colour (January 13, 10h.) as with red (November 17, 6h. 15m.), without being able to discover the aurora-line. On a red mass of light it might appear very weakly, even if the light-mass shone powerfully (November 17, 16h.). Beside, the aurora-line was very often to be recognized everywhere. This sometimes made me think that the whole firmament was covered with aurora material, although the explanation may be that the line everywhere visible springs from an aurora, only slightly extended, reflected from fine clouds, &c., floating in the air. This reflected light showed the aurora-line even on objects on the earth (snow on a field, a wall), and even when the sky was pretty well covered (November 11, 10h.; November 12, 5h.; November 14, 8h.; December 15, 15h. 25m.; December 16, 9h.)."

NOTES.

THE Croonian Lecture of the Royal Society, which, as we have already announced, is to be delivered this year by M. Roux, the "Chef de Service" of the Pasteur Laboratory, has now been fixed for Thursday, May 23, at 4.30 p.m., in the Royal Society's apartments at Burlington House.

A GOOD many arrangements for the Newcastle meeting of the British Association, over which Prof. Flower will preside, have now been made. Among the Vice-Presidents are the Duke of Northumberland, the Earl of Durham, the Bishop of Newcastle, Lord Armstrong, the Mayors of Newcastle and of Gateshead, and Mr. John Morley. The following are the Presidents of the various Sections:—A—Mathematical and Physical Science, Captain W. de W. Abney, F.R.S. B—Chemical Science, Sir I. Lowthian Bell, F.R.S. C—Geology, Prof. James Geikie, F.R.S. D—Biology, Prof. J. S. Burdon Sanderson, F.R.S. E—Geography, Colonel Sir Francis de Winton. F—Economic Science and Statistics, Prof. F. Y. Edgeworth. G—Mechanical Science, Mr. William Anderson. H—Anthropology, Prof. Sir W. Turner, F.R.S. The first general meeting will be held on Wednesday, September 11, at 8 p.m. On Thursday evening, September 12, there will be a *soirée*; on Friday evening, September 13, a discourse on "The Hardening and Tempering of Steel," by Prof. Roberts-Austen, F.R.S.; on Monday evening, September 16, another discourse; and on Tuesday evening, September 17, a *soirée*. Excursions to places of interest in the neighbourhood of Newcastle-on-Tyne are being arranged for Saturday, September 14, and Thursday, September 19.

AT a recent meeting of the Executive Council of the British Section of the Paris Exhibition, the cordial thanks of the Council were given to Sir Frederick Leighton, P.R.A., and the Fine Arts Committee, for their exertions to insure that the Fine Arts Department at the Exhibition should be a credit to the British Section and the country. The result of the exertions of the Committee will be that British art will be represented in Paris by works of many of our foremost artists. Why is not like energy being displayed by English men of science? There ought to be a Science as well as a Fine Arts Committee, and the necessary arrangements might easily be made, as there are several members of the French Institute in England.

THE Directors of the Ben Nevis Observatory have applied to the Association of the Glasgow International Exhibition of 1888 for a grant from the surplus fund of the Exhibition. In the memorial setting forth the claims of the Observatory on the support of the public and of public bodies, reference is made to the immediate and important advantages that will result from the work of the High and Low Level Observatories of Ben Nevis towards the further development of the meteorology of the Clyde, in which Glasgow has taken so prominent a part, and by the results of which the shipping and commercial interests will to a certainty be largely benefited; and it is urged that, in carrying out these national objects, the Directors must look to the liberality of the public and of public bodies, for the assistance required to supplement the aid offered by the Government towards the completion and maintenance of this double Observatory.

THE Botanical Society of France has issued a circular signed by its President, M. de Vilmorin, and Secretaries, inviting foreign botanists to attend a Botanical Congress to be held in Paris during the second half of August in the present year, and to present treatises on botanical subjects, pure or applied, that may be most familiar to them, with the view of promoting discussion on them. The following subjects are especially proposed for consideration:—(1) The usefulness of establishing joint action between the different Botanical Societies and Museums for the purpose of preparing accurate maps of the distribution of species and genera of plants over the globe, a work similar to that undertaken by International Geological Congresses. An Exhibition of maps, books, *brochures*, photographs, &c., relating to botanical geography will be held, during the Congress, at its place of meeting. (2) Characters for classification furnished by anatomy. Botanists intending to be present at the Congress should send in their names, before June 1, to M. P. Maury, the Secretary of the Organizing Committee, 84 Rue de Grenelle, Paris, when they will receive special invitations, and information as to the day and place of meeting. The titles of papers proposed to be read, or of verbal communications, should be forwarded as early as possible.

We reprint from the *Times* of March 26 the following obituary notice:—"We have to record the death, at a ripe age, of a man whose name is well known and honoured wherever the science of naval architecture is studied. Joseph Woolley, M.A., LL.D., F.R.A.S., formerly Principal of the School of Mathematics and Naval Construction at Portsmouth, and subsequently, for many years, the Admiralty Director of Education, died at Sevenoaks on Sunday, after a few days' illness. Trained at Cambridge, where he was a Fellow of St. John's College, he was selected in 1848 as the head of the Technical School founded in that year by the Admiralty. He continued to hold that office until the school was discontinued in 1853. When a School of Naval Architecture was again founded, on other lines, at South Kensington, in 1864, Dr. Woolley was appointed Inspector-General by the Committee of Council on Education, and he continued to superintend the school until his retirement from active life. In 1850 he published a "Treatise on Descriptive Geometry," which is widely known as a text-book. In 1860, when the Institution of Naval Architects was founded, very largely by his own personal influence, Dr. Woolley opened its proceedings by an address on "The present state of the mathematical theory of naval architecture." He enriched the Transactions of the Institution with frequent contributions on all current questions presenting any peculiar difficulty. He was a member of the Committee on Designs in 1871, and of other important Naval Committees. He was for many years in holy orders, but he relinquished them later in life, although he continued to be to the last a devout worshipper in the Church of England. He was a man who was much loved by all who were privileged to work with him."

We regret to learn that Prof. Donders died at Utrecht on Sunday.

Two physiologists of note have recently died: Prof. Krukenberg, of Jena, well known for his researches in invertebrate physiology, and R. Gscheideln, of Breslau, the author of a "Physiologische Methodik," which unfortunately remains unfinished.

We learn from *Science* that Captain John Ericsson, whose death, at New York, we lately recorded, continued to labour at his sun-motor until within two weeks of his death. "As he saw his end approaching, he expressed regret only because he could not live to give this invention to the world in completed form. It occupied his thoughts up to his last hour. While he could hardly speak above a whisper, he drew his chief engineer's face close to his own, gave him final instructions for continuing the work on the machine, and exacted a promise that the work should go on." *Science* says that the respect shown at Captain Ericsson's funeral was such as is seldom seen at that of a private citizen. "The streets in the neighbourhood of his late residence were crowded from the early morning hours with thousands, who for four hours passed through the house to pay homage to the departed genius. New York is a place full of human beings,—so full that each pays little or no heed to his neighbour; yet the great respect for this man of science and of action was shown in the number and character of those who followed his remains to their resting-place, in the uncovered heads as they were borne along the busy streets, and in the impossibility of admitting to Trinity all that wished. Ericsson was a man who could have endeared many to him, but he had a strong sense of duty to his work, which induced him to make few friends. This final homage of the unmindful crowds of the great city was to his genius well applied."

A gift of some scientific as well as artistic interest has just been made to the Royal Hibernian Academy, Dublin, by Miss Mary Anne Nicholl. She has presented to the Academy fifty-six studies in water-colours of the palms and foilage plants and fruits of Ceylon, painted by her late father, Andrew Nicholl, R.H.A., who held the first appointment of Master of Landscape Painting, Engineering, Drawing, and Design, in the Colombo Academy. The studies are accompanied with a list of the names of the flora.

At the distribution of prizes to students of the Polytechnic Institute, Regent Street, on Monday, Mr. W. T. Paton was able to give a good account of the past year's work. The number over and above the usual attendance had been, he said considerably more than 1000, and they now had 7000 members, who were attending classes there. The Lord Mayor, who gave away the prizes, spoke of the advance which had lately been made in technical education, and of the good influence exerted by the Polytechnic Institute. The Committee wished him to say that they had now annexed the West End School of Art to the Institute. Further funds would be required to carry on the work. The Charity Commissioners would provide £31,000 for endowment if another £4000 were forthcoming.

The Geographical Society of Bremen has commissioned Dr. Kückenthal, of Jena, to undertake another journey to the Arctic regions, in order to make zoological researches. He will start for Spitzbergen at the end of April, and is expected to return in October next.

Prof. Franz Exner, of Vienna, who has spent some months in Ceylon studying atmospheric electricity there, is now on his way back to Europe. A grant was made by the Vienna Academy of Sciences in aid of his scientific work.

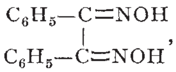
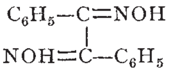
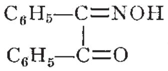
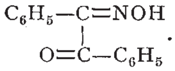
The new Natural History Museum at Vienna will be opened to the public in the summer, and it is expected that the rich collections will attract large numbers of visitors.

Dr. J. Hann, Director of the Austrian Meteorological Service, has laid before the Vienna Academy of Sciences an exhaustive investigation of the diurnal range of the barometer over the globe. He has calculated the harmonic coefficients for each month, and for the year, for a large number of places, and has investigated the variation both of the phases and of the amplitudes of the single and double daily oscillations. The latter show a remarkable independence of geographical and seasonal influence (as before pointed out by Lamont and others), and appear to be connected with a cosmical origin. The investigation also shows that the amplitudes of the semi-diurnal oscillation decrease with height in exact proportion to the pressure, and have a marked dependence upon latitude. The yearly range exhibits two maxima at the periods of the equinoxes, and also a third maximum which falls in January in both hemispheres, while in July the amplitude of the double daily oscillation is smallest over the whole globe. The author also investigates the single daily oscillation, in connection with the influence exerted by the position of the station, as well as the range of the barometer at sea, and arrives at some interesting results.

SIX shocks of earthquake were noticed at Aquila on March 11. Two were very severe, but had no injurious results. Shocks were felt at Idstein, Auroff, and Görsrod, near Wiesbaden, on March 12, at 2.29 a.m. The direction of the shocks was from west to east.

TELEGRAMS received at Madrid report that a strong shock of earthquake was felt on March 25 at Alhama in the province of Granada. No damage was done, but great alarm prevailed among the inhabitants.

M. B. HASSELBERG, of Pulkowa, has been studying the absorption spectrum of iodine, which he has succeeded in resolving into widely separated lines with a Rowland grating, and in photographing. The wave-lengths of about 3000 lines have been determined by a dividing-engine.

ANOTHER interesting pair of geometrical isomers have been discovered by Dr. Auwers and Prof. Victor Meyer. They are the monoxims of benzil, both possessing the constitution $C_6H_5 . C(NOH) . CO . C_6H_5$. Benzil, $C_6H_5 . CO . CO . C_6H_5$, is the typical di-ketone of the benzene series, and reacts, like other ketones, with hydroxylamine. As there are two CO groups present, there are two possible oxims, a monoxim and a dioxim. A few months ago, Dr. Auwers and Prof. Meyer showed that there were really two dioxims, both of the constitution $C_6H_5 . C(NOH) . C(NOH)\ C_6H_5$, but differing in the arrangement of the various groups in space. One of these isomers was shown to probably possess the configuration  $\begin{array}{l}C_6H_5{-}C{=}NOH\\ \qquad\ |\\ C_6H_5{-}C{=}NOH\end{array}$, while the other, which melts 30° C. lower than the first, may be formulated  $\begin{array}{l}\quad C_6H_5{-}C{=}NOH\\ \qquad\qquad |\\ NOH{=}C{-}C_6H_5\end{array}$. It is now found that there are also two corresponding monoxims, one of which, termed the α-monoxim, may be represented as  $\begin{array}{l}C_6H_5{-}C{=}NOH\\ \qquad\ |\\ C_6H_5{-}C{=}O\end{array}$, while the β-monoxim has its groups probably disposed in the manner  $\begin{array}{l}C_6H_5{-}C{=}NOH\\ \qquad\ |\\ \quad O{=}C{-}C_6H_5\end{array}$. Both these monoxims are obtained when benzil and hydroxylamine, NH_2OH, are allowed to react upon each other at the ordinary temperature. If the hydroxylamine be used in the form of its hydrochloride dissolved in a little water and added to an alcoholic solution of the benzil, a preponderating quantity of the β-compound is formed, and in greater quantity the higher the temperature. At − 15° C., the product consists largely of the α-monoxim; at 0°, about equal quantities of the two are formed; at the ordinary temperature of a room the product is almost exclusively of the β-compound; and finally, when the operation is conducted upon a water-bath, a quantitative yield of the β-monoxim is obtained. The α compound is best prepared by dissolving 10 parts of benzil in 30 parts ordinary alcohol, and adding a mixture of 3½ parts of hydrochloride of hydroxylamine and 4 parts of soda dissolved in a little water. After standing a few hours the mixture is poured into water, and the turbid liquid thus formed filtered. On acidifying the filtrate an oil separates out which rapidly crystallizes. On recrystallizing the mixed crystals from dilute alcohol, a large yield of the pure α-compound is obtained, owing to its much more sparing solubility, in microscopic tabular four-sided crystals possessing a mother-of-pearl lustre. It may also be recrystallized from benzol, from which it is obtained in the same form. The crystals melt sharply at 137°. On the other hand, the β-monoxim crystallizes from alcohol in thick prisms, melting at 113°, 24° lower than the α-compound. Another striking point of dissimilarity is that from benzol the β-compound crystallizes with half a molecule of benzol of crystallization. Each reacts with a further equivalent of hydroxylamine to form the corresponding dioxim; and each also forms a characteristic ethereal salt with acetic acid, the α-acetic ether forming broad flat prisms melting at 61°, and the β-acetate crystallizing in needles of melting-point 78°. Hence the oxims of benzil form a most beautiful and indubitable case of true geometrical isomerism, and a valuable further justification of the modified Van t' Hoff-Wislicenus hypothesis. It is to be hoped that, by further investigations of similar cases, we may indeed eventually be enabled to form some idea of the actual orientation of the atoms in our chemical molecules.

THE American Society of Naturalists recently appointed a Committee to report on the teaching of science in schools. The Report, which has been adopted and approved of by the Society, contains, amongst others, the following suggestions as to the mode in which, in the opinion of the Committee, science can best be taught in the schools:—Instruction in natural science should begin in the lowest grades, where it should be conducted chiefly by means of object-lessons. More systematic instruction should be given in the high schools during the four years' course preparatory to College. An elementary knowledge of some one or more branches of natural science should be required of every candidate for matriculation at College. There are some differences of opinion as to the details in carrying out this plan, but the Committee recommends that scientific study should begin with the study of plants and animals, the botanical instruction beginning with drawing the outlines of the leaves of plants, and the zoological with descriptions of the more familiar animals, special prominence being given to the study of those plants and animals which are useful to man. The simple geological phenomena of the district in which the school is situated should be taught. Children should be encouraged to collect specimens of all kinds of natural objects, and these specimens could be made the subject of the object-lessons. An attempt should be made to teach the rudiments of human physiology and hygiene. The Committee recommends the introduction into the highest grades of the grammar school of very rudimentary lessons in physics and chemistry, which would pave the way for further study in the high schools and Colleges.

WE have received several interesting papers, by Prince Roland Bonaparte, on subjects relating to geography and anthropology. One of them (in French) is an account of the early voyages of Dutchmen to the East India Archipelago. In another series of French papers the Prince deals with geographical discoveries in New Guinea. He has also reprinted from the Journal of the Anthropological Institute a note (in English) on the Lapps of Finmark. In this paper he presents various anthropological data collected during a tour of three months in Scandinavia. A more elaborate paper (in French), by F. Escard, which is printed in the same form as these essays, gives a full account of the experiences of Prince Roland and his companions in the country of the Lapps.

THE "Record of the Excursions of the Geologists' Association, 1860-84," which has been prepared by Mr. T. V. Holmes, is now ready for the press, but it will not be printed until the names of a sufficient number of subscribers have been received. The work will consist of over 500 pages, and contain accounts of all the sections and districts visited by the Association down to the end of 1884, with the illustrations (sections, &c.), which have from time to time appeared in the circulars and Proceedings.

A FRENCH translation of Prof. Romanes's "Mental Evolution in Man" is in course of preparation in Paris.

THE *Oesterreichische Botanische Zeitschrift*, now in its thirty-ninth year, is edited, from the commencement of the present year, by Dr. Richard R. von Wettstein.

AT the annual meeting of the Governors of Aberdare Hall, University College, Cardiff, which took place this month, the Executive Committee were able to submit a most satisfactory report. Several students had distinguished themselves by gaining scholarships both at the College and Hall; two had taken the B.A. degree (London); others had passed the Intermediate in Arts and matriculation examinations, among whom was Miss Moss, who took the twelfth place in Honours division, matriculation examination.

THE additions to the Zoological Society's Gardens during the past week include two Chinese Mynahs (*Acridotheres cristatellus*) from China, presented by Mrs. Rigby; a Rose-crested Cockatoo (*Cacatua moluccensis*) from Moluccas, presented by Miss Liming; a Long-tailed Copsychus (*Copsychus macrurus*, ♂) from India, two Silky Bower-Birds (*Ptilonorhynchus violaceus*, ♂ ♀) from Australia, a Blue and Yellow Macaw (*Ara ararauna*) from South America, deposited; two Squirrel Monkeys (*Chrysothrix sciurea*) from Guiana, a Four-horned Antelope (*Tetraceros quadricornis*, ♂) from India, a South American Flamingo (*Phœnicopterus ignipalliatus*) from South America, purchased; a Gayal (*Bibos frontalis*, ♀), a Vulpine Phalanger (*Phalangista vulpina*), born in the Gardens.

OUR ASTRONOMICAL COLUMN.

OBSERVATIONS OF JUPITER.—An excellent series of eighty-four drawings of the planet Jupiter at different periods during the years 1881-86, made with the reflector of 3 feet aperture at Birr Castle Observatory by Dr. Boeddicker, has just been published in the form of a communication to the Royal Dublin Society (vol. iv. series 2, March 1889). Twenty-two of the drawings were made during the opposition of 1881-82, thirty-one during 1882-83, twenty-one during 1883-84, eight during 1884-85, and two during 1885-86. The drawings made at the telescope have been exactly reproduced by a photo-mechanical process in order to avoid the errors which might have arisen by the employment of the ordinary lithographic process. Throughout the descriptive notes a very convenient notation has been employed for reference to the various features. Dr. Boeddicker draws attention to the three observations of March 16, 1883, showing remarkable changes in the appearance of one of the belts during the course of an hour. The first drawing shows two detached patches, which, in the succeeding drawings, become the shadows of large cumulus-like clouds lying across the Jovian surface. It is suggested that these apparent changes may be simply due to the combination of the more obvious details with the finer ones after prolonged examination, and that the discrepancies between drawings made at the same time by different observers may thus be accounted for. Photography may be expected in the near future to overcome this difficulty.

ASTRONOMICAL PHENOMENA FOR THE WEEK 1889 MARCH 31—APRIL 6.

(For the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on March 31

Sun rises, 5h. 38m.; souths, 12h. 4m. 8·2s.; sets, 18h. 30m.: right asc. on meridian, 0h. 40·3m.; decl. 4° 21′ N. Sidereal Time at Sunset, 7h. 7m.

Moon (New on March 31, 12h.) rises, 6h. 12m.; souths, 12h. 13m.; sets, 18h. 28m.: right asc. on meridian, 0h. 49·2m.; decl. 0° 7′ S.

Planet.	Rises.		Souths.		Sets.		Right asc. and declination on meridian.			
	h.	m.	h.	m.	h.	m.	h.	m.	°	′
Mercury..	5	17	10	47	16	17	23	23·3	6	35 S.
Venus.....	6	4	14	16	22	28	2	52·9	22	52 N.
Mars......	6	16	13	22	20	28	1	58·3	12	1 N.
Jupiter....	2	1	5	57	9	53	18	31·9	22	57 S.
Saturn....	12	49	20	28	4	7*	9	5·7	17	53 N.
Uranus...	19	16*	0	42	6	8	13	16·3	7	21 S.
Neptune..	7	33	15	17	23	1	3	53·7	18	37 N.

* Indicates that the rising is that of the preceding evening and the setting that of the following morning.

April.	h.	
2	2	Mars in conjunction with and 5° 7′ north of the Moon.
3	5	Venus in conjunction with and 11° 7′ north of the Moon.

Variable Stars.

Star.	R.A.		Decl.						
	h.	m.	°	′			h.	m.	
U Cephei	0	52·5	81	17 N.	Apr.	1,	4	15	*m*
					,,	6,	3	55	*m*
Algol	3	1·0	40	32 N.	Mar.	31,	19	50	*m*
ζ Geminorum	6	57·5	20	44 N.	Apr.	4,	1	0	*M*
R Canis Minoris	7	2·6	10	12 N.	,,	5,			*m*
R Canis Majoris	7	14·5	16	11 S.	,,	5,	19	47	*m*
			and at intervals of				27	16	
U Monocerotis	7	25·5	9	33 S.	Apr.	6,			*M*
U Geminorum	7	48·5	22	18 N.	,,	6,			*M*
W Virginis	13	20·3	2	48 S.	,,	2,	1	0	*m*
X Boötis	14	18·9	16	50 N.	,,	1,			*M*
δ Libræ	14	55·1	8	5 S.	,,	2,	2	0	*m*
U Coronæ	15	13·7	32	3 N.	,,	4,	4	30	*m*
β Lyræ	18	46·0	33	14 N.	,,	3,	0	0	m_2
R Lyræ	18	52·0	43	48 N.	,,	5,			*m*
δ Cephei	22	25·0	57	51 N.	,,	2,	23	0	*M*

M signifies maximum; *m* minimum; m_2 secondary minimum.

Meteor-Showers.

	R.A.	Decl.	
Near γ Libræ	233°	15° S.	Swift; long paths.
From Delphinus	305	12 N.	Slow; bright.

GEOGRAPHICAL NOTES.

AT the meeting of the Geographical Society on Monday two papers were read, both dealing with the Caucasus, midway between Kazbek and Elburz. Here the chain towers up in two great parallel crests, containing within a few square miles at least half a dozen peaks over 16,000 feet in height, an elevation probably reached nowhere else by the summits of the crystalline crest. Two of these peaks are recognized as the second and third summits of the Caucasus—Koshtantau, 17,091 feet; and Dychtau, 16,924 feet. One of the papers, by Mr. A. F. Mummery, described his ascent last summer of Koshtantau, while Mr. H. W. Holder dealt with the peaks of the neighbouring Bezingi Glacier. From Mujal, on the south-west of the Zanner Glacier, Mr. Mummery and his companion made their way round by the Thuber and Gvalda passes to Bezingi in order to make the ascent from that side. The arrangement of this part of the chain, Mr. Mummery states, is, from an Alpine point of view, very curious. There is a lofty ridge with occasional *aiguilles*, from the southern slopes of which stretch the great ice-fields of the Thuber, and there is a second and rather less lofty ridge to the north and parallel to it, from the northern flank of which flow the Basil-su and its various affluents. In the narrow trough between these two ridges lies the head of the Gvalda Glacier. Though seldom so clearly marked as in this instance, the same system of short parallel ridges may be traced throughout the whole central group, with the result that the upper and middle basins of the great glaciers are nearly always parallel to the main ridges, and it is only when the drainage from these catchment basins reaches the head of the lateral valleys that the ice sweeps round and flows away at right angles from the water-shed. The Gvalda Glacier is probably the most important on the south side of the Caucasus, and far exceeds in size any on the south slope of the Alps. Its basin probably exceeds in extent that of the Glacier du Géant, to which it is not without a resemblance. The Caucasian glaciers in this part of the chain are